

Independent Variable

- The thing you are testing
- The one and only variable you will allow to change

Control

- What you will compare your results to
- Usually just the absence of the Independent Variable

8.1.3

Constants

- The variables that you don't allow to change
- What you keep the same in each test

Dependent Variable

- What you measure to compare the results of your tests
- Should be able to be charted or graphed

8.1.3

Materials

- Detailed list of everything you need to conduct the experiment
- Should include amounts

Procedures

- Step-by-step instructions for how to conduct the testing
- Should be detailed enough that someone else could follow them and do exactly what you did.
- The experiment should be repeated at least twice for valid results

8.1.4

Recording Data

- Very careful record keeping is important for valid results
- Use charts or tables to organize data
- Run trial tests before the real experiment to help work out “bugs”
- Record measurements as well as observations and things you want to remember about what happened

8.1.4

Analyze the Results

- What are your results?
- Create charts, tables and graphs to represent all of your data
- Perform any calculations that will help you determine what the results mean
Averages, Percentages, Totals
- What are your possible sources of error (things that could make your results wrong)
Inaccurate measurements, contamination, etc.

8.1.4

Draw Conclusions

- What is the answer to your question based on your results?
- Was your hypothesis supported? Why or why not?
- If you did this experiment again, what would you do differently?
- What other experiments could you do to further test this?

8.1.4

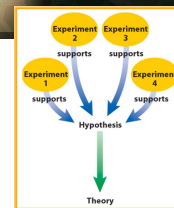
Your results are not valid if...

- They are based on opinions rather than data
- You draw conclusions that don't logically follow from the evidence
- You over-generalize (make a rule based on just a few observations)
- Your sample size is too small or is biased
- You don't have a control

8.1.4 8.2.9 8.2.10 8.5.6 8.5.7

Scientific Theory

- An explanation of something based on scientific knowledge that is the result of many observations and experiments.
- It is not a guess or someone's opinion.
- If data collected from several experiments over a period of time all support the hypothesis, it finally can be called a theory.
- Theories can change as new knowledge is gained from additional experiments.



8.1.1

Scientific Law

- A scientific law is a statement about how things work in nature that seems to be true all the time.
- They are less likely to change than theories.
- Laws tell you what will happen under certain conditions but do not necessarily explain why it happened.

Class Schedule

- **Thursday – (8-31)**
 - Activity
 - Video
 - Interviews
 - C-Layers due at END of class
- **Wednesday (9-6)**
 - Quiz
 - Lab
- **Friday (9-8)**
 - Review
 - Test

Class Schedule

- **Friday (9-1)**
 - Activity
 - Video
 - Interviews
 - C-Layers due at END of class
- **Tuesday (9-5)**
 - Quiz
 - Lab
- **Thursday (9-6)**
 - Review
 - Test